REMARKS

First, Applicant wishes to thank the Examiner for the thoroughness of the search which was conducted in conjunction with the pending Office Action. However, Applicant respectfully requests reconsideration of the present application in view of the reasons that follow.

In the May 29, 2008 Office Action, the Examiner rejected claims 15 and 17-18 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,680,483 (Tranchard). For the following reasons, Applicant respectfully traverses these rejections.

Independent claim 15 of the present application describes a method of encoding a video sequence. According to claim 15, a first indication is provided in an encoded bitstream. This first indication indicates whether or not all coded pictures at and subsequent to an intra-coded picture in display order can be correctly decoded when a decoding process is started from the intra-coded picture. In other words, this first indication will indicate whether any of the pictures that are displayed after the intra-coded picture rely upon a picture that precedes the intra-coded picture (in decoding order).

Applicant respectfully submits that such an indication is neither taught nor suggested by Tranchard. In rejecting claim 15, the Examiner asserted that the indication of a "P" picture discussed at column 8, lines 1-32 of Tranchard indicated whether or not at least part of the corresponding picture is encoded with reference to a picture preceding the intra-coded picture in encoding order. However, this is not correct. Although P pictures in Tranchard are not intra-coded pictures, the associated indication does not satisfy the requirements of claim 15. To understand this point, the Examiner is respectfully directed to column 8, lines 8-14 of Tranchard, which states:

> The pictures P ("Predictive coded pictures") constitute a second type of pictures which are predicted by unidirectional motion compensation based on a preceding (or possibly subsequent) picture (of the type I or of the type P itself) and which can thus only contain macroblocks of the type P or of the type I.

Applicant does not dispute that the above text discusses how P pictures may be predicted in part based upon an earlier P picture or I picture. However, the indication of claim 15 is more specific than simply defining whether a picture is a P picture or an I picture. Rather, the indication described in claim 15 must indicate whether the picture is at least partially encoded with reference to a picture <u>preceding an intra-coded picture</u> in encoding order. The indication used for P pictures in Tranchard does not include this location-based aspect. Instead, the indication in Tranchard only indicates whether the picture relies upon an earlier or later picture, without any indication whatsoever of whether the relied-upon picture is before or after a particular intra-coded picture. As a result, when a processing device receives an indication of a P picture in Tranchard, it obtains no information from the indication whether a picture relied upon by P is before or after a preceding intra-coded picture; in fact, the indication provides no positional reference for the relied-upon picture at all relative to a previous intra-coded picture. Therefore, the indication of the picture-type alone cannot satisfy the requirements of the indication in independent claim 15.

Additionally, Applicant also notes that, even if the indication in Tranchard was referring to an I picture, this indication would still not satisfy the requirements of claim 15. As discussed above, claim 15 requires that the indication indicate whether the picture is at least partially encoded with reference to a picture preceding the intra-coded picture in encoding order. Importantly, however, claim 15 also requires that the at least one picture be different than the intra-coded picture (since it must be later than the intra-coded picture in encoding order). However, the indication of the I picture in Tranchard refers only to the intra-coded picture itself and no others. Since no other picture is referenced in this indication, it is impossible for the indication to reference a location-based relationship between two pictures.

Because Tranchard fails to teach the use of an indication of whether a picture is at least partially encoded with reference to a picture preceding an intra-coded picture in encoding order, Applicant submits that independent claim 15 cannot be anticipated by Tranchard. Additionally, because claims 17-18 are dependent upon claim 15, Applicant submits that these claims are allowable for at least the same reasons.

The Examiner also rejected claims 9-14, 16 and 19-33 under 35 U.S.C. §103(a) as being obvious over Tranchard in view of U.S. Publication No. 2003/0156640 (Sullivan). Applicant respectfully traverses these rejections as well.

First, with regard to claims 16 and 19, Applicant notes that these claims are dependent upon claim 15 which, as discussed above, includes at least one significant feature that is absent from Tranchard. Applicant submits that Sullivan fails to cure the deficiencies of Tranchard discussed above, and the Examiner has also not asserted as such. Therefore, Applicant submits that claims 16 and 19 are allowable over Tranchard and Sullivan for at least the reasons discussed above.

With regard to claims 9-14 and 20-33, Applicant respectfully submits that the cited prior art also fails to teach all of the limitations of these claims as well. In the case of claim 9, this claim requires that a first indication be encoded in the bitstream. This indication must indicate whether all coded pictures at and subsequent to an intra-coded picture in display order can be correctly decoded when a decoding process is started from the intra-coded picture. Claim 20 includes a similar limitation but from the decoding perspective. In the case of these independent claims, the required indication is similar to that described with regard to claim 15 above, as the indication must provide information to a recipient as to whether a particular picture references a picture that occurs before a particular intra-coded picture in decoding order; if the particular picture references such a located picture, then it cannot be correctly decoded if the first picture to be decoded is the intra-coded picture, since the pictures preceding the intra-coded picture in decoding order are not available to be referenced by the particular picture.

Once again, Applicant submits that this feature is absent from the cited prior art. In the case of Tranchard, the Examiner relied upon column 8, lines 1-8 and 19-32 in asserting that Tranchard teaches this feature. However, this is not accurate. Column 8, lines 1-8 of Tranchard does nothing more than describe the concept of an I picture, which is nothing more than the idea that all individual macroblocks in the picture are coded independently of any other picture. In the case of column 8, lines 19-32, this section describes nothing more than

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one particular ordering for I, P and B pictures in two Groups of Pictures (GOPs). In particular, the cited text states:

> As a picture of the type B which is to be predicted must use the picture P or I which follows it, it is evident that the natural order of restitution, after decoding, of the original sequence and the order of transmitting the pictures must be different: in a GOP the N pictures intended for transmission are placed in the order in which the decoder needs them for decoding the pictures I, P, B. The reorganization of these pictures in their natural order is effected only after decoding. FIG. 1 shows in a sequence of consecutive pictures an example of two GOPs of N=9 pictures (without the choice of N being limitative) with the indication of the type T=I, P or B of the picture, and of arrows showing from which picture(s) a picture P or B is predicted in the example shown.

In other words, the above section only teaches about the ordering of the I, P and B pictures in the specific implementation of Tranchard. There is no discussion of indicating to a user whether a particular P or B picture references a picture before a preceding I picture.

To further understand the difference between claims 9 and 20 and the process of Tranchard, it is helpful to consider Figure 2 of the present application. In Figure 2 (reproduced below), the numbers within each respective picture represent the decoding order of the picture. For example, B18 and B17 will be decoded after I16. In contrast, the left-to-right order of the pictures represents the display order of individual pictures. In other words, B18 and B17 on the left side of Figure 2 will be displayed before I16, even though they are decoded after I16.
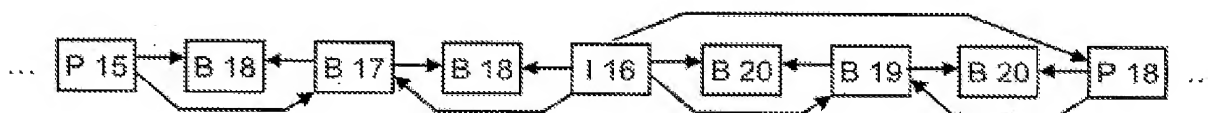
(Figure 2)

In Figure 2, frame I16 satisfies the condition for the indication in claims 9 and 20, since the subsequent frames in display order (B20, B19, B20 again, and B18) can all be decoded in the event that I16 is the first frame to be decoded. This is because none of these later frames in display order rely on any frames that need to be decoded before frame I16. In

contrast, if any of frames B20, B19, B20 again, and B18 relied on, for example, a frame I15, B15 or P15, then the condition at issue would not be met, since the decoder would not have previously decoded any "15" frames before decoding frame I16. Claims 9 and 20 serve to provide an indication to the user regarding whether this condition is met—if a "15" or earlier picture is needed to decode a picture after I16 in display order, this would be indicated in the bitstream. However, Tranchard never even hints at such a teaching. Instead, all that is indicated in Tranchard is whether one or more earlier or later pictures (relative to the frame at issue) is referenced. As a result, no information is provided in Tranchard as to whether all frames after an intra-coded picture can be correctly decoded in the event of a random access at the intra-coded picture. This can lead to decoding errors if one attempts to randomly access the intra-coded picture. By providing the indication of pending claims 9 and 20, on the other hand, one can avoid random access operations beginning with the intra-coded pictures that could lead to such errors.

Because column 8, lines 1-8 and 19-32 of Tranchard fails to teach an indication which indicates whether all coded pictures at and subsequent to an intra-coded picture in display order can be correctly decoded when a decoding process is started from the intra-coded picture, and because Sullivan also fails to teach or suggest such a feature, Applicant submits that claims 9 and 20 and their respective dependent claims are allowable over the prior art of record.

With regard to claims 26 and 32, these claims discuss an indication identifying whether at least a part of at least one picture is encoded with reference to a picture preceding the intra-coded picture in encoding order, wherein the at least one picture has a decoding order succeeding the intra-coded picture. In the context of Figure 2 of the present application, I16 would not satisfy this requirement, since none of B20, B19, B20 again, and B18 reference a picture before I16 in encoding order (e.g., a frame "15" or earlier). In contrast, had one of these frames reference a picture such as "B15" or "P15", then the requirement would be met, since both B15 and P15 would have preceded I16 in encoding order.

Once again, Applicant submits that Tranchard fails to teach such a feature. As discussed above with regard to claims 9, 15 and 20, the cited portions of Tranchard only teach

about the identification and ordering of the I, P and B pictures. There is no discussion of indicating to a user whether a particular P or B picture references a picture before a particular preceding I picture in encoding order. As such, Tranchard fails to teach the relevant limitations of claims 26 and 32. For this reason, and because Sullivan fails to cure this deficiency, Applicant submits that claims 26 and 32 and their respective dependent claims allowable over the cited art.

For all of the above reasons, Applicant respectfully submits that claims 9-14, 16 and 19-33 are allowable over Tranchard and Sullivan.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment instructions in EFS-Web being incorrect or absent, resulting in a rejected or incorrect credit card transaction, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date ___September 29, 2008___   By ___/G. Peter Albert Jr./___

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